

free part of the last whorl having sharper, more widely-spaced riblets. Internal axis slender, moderately gyrate in the later whorls.

Length 24, greatest diam. 1.8 mm.

Length 22.5, greatest diam. 1.9 mm. (truncate).

Collected at "La Lechuza," Monte Toro, by Mr. Charles T. Ramsden, to whom the species is dedicated.

This is a much larger shell than *B. booksiana* Gundl., with less swollen spire, and much less strongly gyrate axis. The basal carina is visible on more whorls, the neck is shorter, and the sculpture less regular. It is a very interesting addition to the subgenus *Gyraxis*.

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#### REMARKS ON CLASSIFICATION OF THE UNIONIDÆ.

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BY L. S. FRIERSON.

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In 1820 and in 1831 C. S. Rafinesque published descriptions of a large number of *Unionidæ*. Of these, he is credited in the "Synopsis of the Naiades, C. T. Simpson, 1900," with but seven or eight species. Conrad, having access to specimens labelled by Rafinesque, gave a list of such species as he identified. Except in such cases as when a patent error can be shown we are bound to accept Conrad's identifications.

The fact that Conrad made mistakes at times, can have no weight, for no author is free from these. Conrad, however, only awarded to Rafinesque those species described in 1820. Those described in 1831 have uniformly been dumped by all subsequent authors (known to the writer) in the trash-pile of "indeterminate *Unionidæ*." There is no valid reason for this, as several of these latter species are clearly and unmistakably recognizable. In place of seven or eight species, Rafinesque is entitled to precedence in at least thirty.

An annotated synoptical table is in process of making, and will be published shortly. Because of the important bearing of these facts upon modern classification, this preliminary sketch is given, from the latter point of view, for our author was a genius in the art of proposing *genera*.

(1) *LEPTODEA* Rafinesque, 1820. Type *leptodon* Rafinesque (= *tenuissimus* Lea). If this species should prove to be congeneric

with *fragilis* Rafinesque (= *gracilis* Barnes) the genus *Pareptera* Ortmann, 1911, must become a synonym.

(2) ELLIPSARIA Rafinesque, 1820. Type (by elimination) *fasciolaris* Rafinesque (= *phaseolus* Barnes) must reduce to synonymy the genus *Ptychobranchus* Simpson, 1900, type *phaseolus* Barnes.

(3) AMBLEMA Rafinesque, 1820. Type (by elimination) *costatus* Rafinesque, 1820, must take the place of *Crenodonta* Schluter, 1836.

(4) HEMISTENA Rafinesque, 1820, (a contraction of *Hemilastena*) proposed tentatively for *Lastena lata*, is of course a synonym. Hence the application of this generic term by Mr. C. T. Simpson, to the *ambigua* Say (= *hildrethianus* Lea) can not stand. For this shell, *ambigua* Say, I therefore propose the new generic term *Simpsonaias*.

(5) EPIOBLASMA Rafinesque, 1831. Type *biloba* Rafinesque, 1831, (= *foliatus* Hildreth) must replace the subgenus *Dysnomia* Agassiz, 1852.

(6) TOXOLASMA Rafinesque, 1831. Type (by elimination) *lividus* Rafinesque, 1831, (= *glans* Lea) must take the place of the subgenus *Carunculina* Simpson, 1900, type *texasensis* Lea, and the group really should have generic standing.

(7) LEMIOX Rafinesque, 1831. Type *rimosus* Rafinesque, 1831 (= *calatus* Conrad). Since this exceedingly characteristic species deserves generic rank, it must, for this species at least, take the place of *Micromya* Agassiz.

(8) DECURAMBIS Rafinesque, 1831. A subgenus proposed for *Alasmodon marginata* Say, variety *truncata* (= *scriptum* Rafinesque) and *atropurpureum* Rafinesque, 1831 (= *raveneliana* Lea). This subgenus must displace *Rugifera* Simpson, 1900.

(9) BARIOSTA Rafinesque, 1831. Type *ponderosus* Rafinesque, 1831, a synonym of *crassidens* Lamarek (= *trapezoides* Lea), is antedated by *Amblesma* Rafinesque, unless the *U. crassidens* Lamarek (= *trapezoides* Lea) should prove to be, as Conrad suggested, of a different group from the *plicatus* group.

(10) SULCULARIA Rafinesque, 1831. Type (by elimination) *badium* Rafinesque (= *Marg. holstonia* Lea) must be regarded as a subgenus of *Symphynota* Lea, as constituted by Simpson, 1900, replacing in part the subgenus *Pressodonta* Simpson, 1900.

(11) DIPLASMA Rafinesque, 1831. Type *D. marginata* Rafinesque, must take the place of *Lamellidens* Simpson, 1900, type

*marginalis* Lamarck. The failure to recognize this well-defined genus by most subsequent authors is a very remarkable fact.

In the preparation of the above remarks I am indebted in a very large degree to my friend Dr. A. E. Ortmann.

## MOLLUSKS FROM MAGICIAN LAKE, CASS AND VAN BUREN COUNTIES, MICHIGAN.

BY FRANK C. BAKER.

Magician Lake lies between Van Buren County on the north and Cass County on the south. It is about two and a half miles long and half a mile wide. The banks on the north border are high but on the south, east and west they are for the most part low and swampy. The lake occupies an elongated depression in the Wisconsin drift and contains four deep holes, 40 to 60 feet in depth. The shores are shallow and shelving, and, with the exception of one or two short intervals, one may wade entirely around the lake. The outlet is at the southeast side (known as Silver Creek), and empties into the West branch of Dowagiac Creek, which drains into the St. Joseph River, a Lake Michigan stream. The migrations of the mollusks have probably been largely by the way of the St. Joseph, although some of the species may have reached this spot in post-glacial time via the Kankakee-St. Joseph portage; but the fauna as a whole probably reached these lakes by way of the Chicago outlet when Lake Michigan was in the Lake Chicago stage. It is evident that Magician Lake was once much higher, with a large, wide outlet, for high terraces may be seen on the south, and also bordering the outlet. Ancient marl beds exist, now covered by three feet of peat, containing mollusks of a colder climate, attesting the ancient occupancy of this lake by icy waters.

Mollusks were notably abundant in individuals and species. The species are listed by ecological regions. My thanks are due to Dr. Herman S. Pepoon for assistance in collecting much of the material.

Beach debris South Shore, all dead shells.

<i>Alasmidonta calceola</i> (Lea).	<i>Planorbis antrosus</i> Conrad.
<i>Anodonta grandis footiana</i> Lea.	<i>Planorbis antrosus angistomus</i>
<i>Lampsilis luteola</i> (Lam.).	Hald..
<i>Sphaerium simile</i> (Say).	<i>Planorbis parvus</i> Say.